

**ABSTRACT**

A mixer circuit having improved linearity and noise figure is disclosed. The mixer circuit comprises an amplification unit having an input terminal and an output terminal, the amplification unit amplifying a signal applied to the input terminal to output it to the output terminal; a mixing unit having first, second and third input terminals, and first and second output terminals, the mixing unit mixing signals respectively applied to the first and second input terminals with a signal supplied to the third input terminal, to respectively output the mixed signals to the first and second output terminals; a capacitor connected between the output terminal of the amplification unit and the third input terminal of the mixing unit; and a current source for providing a specific quantity of current to the third input terminal of the mixing unit such that the quantity of current flowing through the third input terminal of the mixing unit is substantially larger than the quantity of current flowing through the amplification unit.